Eric M. Wilcox

NOAA Geophysical Fluid Dynamics Laboratory
Princeton University Forrestal Campus, US Rte 1
P.O. Box 308
Princeton NJ 08542

phone: (609) 452-6500 x6995
fax: (609) 987-5063
ewilcox715@yahoo.com
www.gfdl.noaa.gov/~emw

Education

2002 — Ph.D. Oceanography, Scripps Institution of Oceanography, University of California, San Diego. *Dissertation:* Spatial and Temporal Scales of Precipitating Tropical Cloud Systems. *Advisor:* Prof. V. Ramanathan.

1995 — B.S. Physics, University of California, San Diego.

Professional Experience

Aug. 2003 - present — Visiting fellow of the NOAA Postdoctoral Program in Climate and Global Change, Princeton University Program in Atmospheric and Oceanic Sciences, and NOAA Geophysical Fluid Dynamics Laboratory.

Investigations of precipitation formation processes and variability in observations and climate model simulations.

Dec. 2002 - July 2003 — Postgraduate research atmospheric physicist, Center for Atmospheric Sciences, Scripps Institution of Oceanography, University of California, San Diego.

Provided remote sensing analysis of aerosols and clouds in the marine stratocumulus cloud regime off of the California coast in preparation for aircraft sampling of aerosol cloud interactions.

1996 - 2002 — Graduate student researcher, Center for Atmospheric Sciences, Scripps Institution of Oceanography, University of California, San Diego.

Performed analysis of satellite observations of clouds and precipitation to explore their spatial and temporal distributions and evaluate general circulation model parameterizations of clouds, convection and aerosol deposition. Coursework in atmospheric physics, radiative transfer, fluid dynamics, dynamical oceanography and marine chemistry.

1994 - 1996 — Research programmer, Institute for Geophysics and Planetary Physics, Scripps Institution of Oceanography, University of California, San Diego.

Explored modifications to and analysis of a numerical simulation of sediment transport in streams to investigate the formation of rippled sediment patterns.

1993 - 1994 — Research assistant, Physics department, University of California, San Diego.

Low temperature measurements of electrical resistivity in amorphous rare earth silicon alloy materials.

Teaching Experience

Spring, 2003 — Teaching assistant, SIO 217C: Atmospheric and Climate Science III, Scripps Institution of Oceanography, University of California, San Diego.

Fall, 1999 — Teaching assistant, SIO 202: Climate and Climate Change, Scripps Institution of Oceanography, University of California, San Diego.

For both: gave occasional lectures, led informal discussion sessions, guided in the use of a numerical model of the planetary energy balance as a teaching tool and for homework exercises, administered and graded exams, and graded homework.

1994-1995 — Informal tutor in undergraduate level physics.

Field Experience

Spring, 2004 (planned)	Cloud Indirect Effects Experiment (CIFEX), North-Eastern Pacific. Satellite remote sensing analysis of clouds and aerosol for planning of aircraft sampling. Participated in preparation of a successful NSF facilities proposal for an airborne research experiment.
Winter, 1999	Kaashidhoo Climate Observatory, Indian Ocean Experiment (INDOEX), Republic of Maldives. Conducted radiosonde and surface radiative flux measurements.

Awards

2003 - 2005 NOAA Climate and Global Change Postdoctoral Fellowship.

2001 Best Student Poster Award, 11th American Meteorological Society Conference on Satellite Meteorology and Oceanography.

1998 Universities Space Research Association/NASA Graduate Student Summer Program Fellowship, Goddard Space Flight Center, Maryland. Mentor: Dr. James Weinman.

1994 University of California President's Undergraduate Research Fellowship.

Professional Activities

Associate editor: Journal of the Environment and Development (1998)
Reviewer for Journal of Climate
Scientific judge: National Ocean Sciences Bowl regional and national competition (2003)
Scripps Inst. Oceanography Ad-hoc Student Committee for Faculty Evaluations (1996-1999)
Climate Sciences student representative: Scripps Inst. Oceanography Student Committee (1996-1999)
Member of the American Meteorological Society
Member of the American Geophysical Union

Peer-Reviewed Publications

Wilcox, E. M., Spatial and Temporal Scales of Precipitating Tropical Cloud Systems in Satellite Imagery and the NCAR CCM3. *J. Climate*, **16**, pp. 3545-3559, 2003.

Wilcox, E. M. and V. Ramanathan, Scale Dependence of the Thermodynamic Forcing of Tropical Monsoon Clouds: Results from TRMM Observations. *J. Climate*, **14**, pp. 1511-1524, 2001.

Hellman, F., M. Q. Tran, A. E. Gebala, E. M. Wilcox and R. C. Dynes, Metal-Insulator Transition and Giant Negative Magnetoresistance in Amorphous Magnetic Rare Earth Silicon Alloys. *Phys. Rev. Lett.*, **77**, pp. 4652-4655, 1996.

Submitted and Other Publications

Wilcox, E. M. and V. Ramanathan, The Impact of Observed Precipitation upon the Transport of Aerosols from South Asia. Submitted to *Tellus B*, 2003.

Wilcox, E. M., Spatial and Temporal Scales of Precipitating Tropical Cloud Systems. Ph.D. dissertation, Scripps Institution of Oceanography, University of California, San Diego, 2002.

Invited Presentations

"Spatial Scales of Tropical Cloud Systems and Their Impact on the Atmospheric Environment". Geophysical Fluid Dynamics Laboratory, Princeton University, January 23, 2003.

"Satellite Observations of the Spatio-Temporal Scales of Tropical Cloud Systems: Implications for the Parameterization of Aerosol Scavenging". Max Planck Institute for Chemistry, Mainz Germany, May 29, 2002.

"Lifecycle of a Tropical Cloud System". Scripps Institution of Oceanography, University of California, San Diego, April 3, 2001.

Conference Proceedings

Wilcox, E. M., Instantaneous Rain Rates in Satellite Observations and a General Circulation Model. American Geophysical Union Fall Meeting, San Francisco California, December 2003 (poster).

Wilcox, E. M. and V. Ramanathan, Application of Satellite Precipitation Measurements in a Study of Aerosol Removal Rates. 5th Conference on Atmospheric Chemistry: Gases, Aerosols, and Clouds, 2003 American Meteorological Society Annual Meeting, Long Beach California, February 2003.

Wilcox, E. M. and V. Ramanathan, Sensitivity of Aerosol Amount to the Spatial and Temporal Distribution of Precipitation. American Geophysical Union Fall Meeting, San Francisco California, December 2002 (poster).

Wilcox, E. M., The Use of TRMM Data for Validating General Circulation Model Parameterizations of Clouds and Precipitation. NASA Tropical Rainfall Measuring Mission (TRMM) International Science Conference, Honolulu Hawaii, July 2002.

Wilcox, E. M., Spatial and Temporal Scales of Precipitating Tropical Cloud Systems in Satellite Imagery and the NCAR CCM3. NASA CERES Program Science Team Meeting, Williamsburg Virginia, May 2002.

Wilcox, E. M. and V. Ramanathan, Spatio-Temporal Scales of Indian Ocean Monsoonal Cloud Systems in Geosynchronous Satellite Images and a General Circulation Model. 13th Symposium on Global Change and Climate Variations, 2002 American Meteorological Society Annual Meeting, Orlando Florida, January 2002.

Wilcox, E. M. and V. Ramanathan, A Lagrangian Approach to the Validation of Spatio-Temporal Cloud Properties in a GCM Using Geostationary Satellite Imagery. American Geophysical Union Fall Meeting, San Francisco California, December 2001.

Wilcox, E. M., Temporal Scales of the Areal Coverage and Precipitation of Monsoonal Convective Cloud Systems over the Tropical Indian Ocean. 11th American Meteorological Society Conference on Satellite Meteorology and Oceanography, Madison Wisconsin, October 2001 (poster).

Wilcox, E. M. and V. Ramanathan, Thermodynamic Forcing of Tropical Monsoon Clouds Over the Indian Ocean. American Geophysical Union Fall Meeting, San Francisco California, December 1999.

Extracurricular Activity

12 years national and international sailing competition:

1997, 1998 and 1999 national champion crewman: Snipe yachting class.
1997, 1999 and 2001 US national team member: Snipe yachting class World Championships.
1994-1995 team captain: U.C. San Diego Sailing Team.